

Solar 101

Solar Hot Water

February 23, 2011

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President

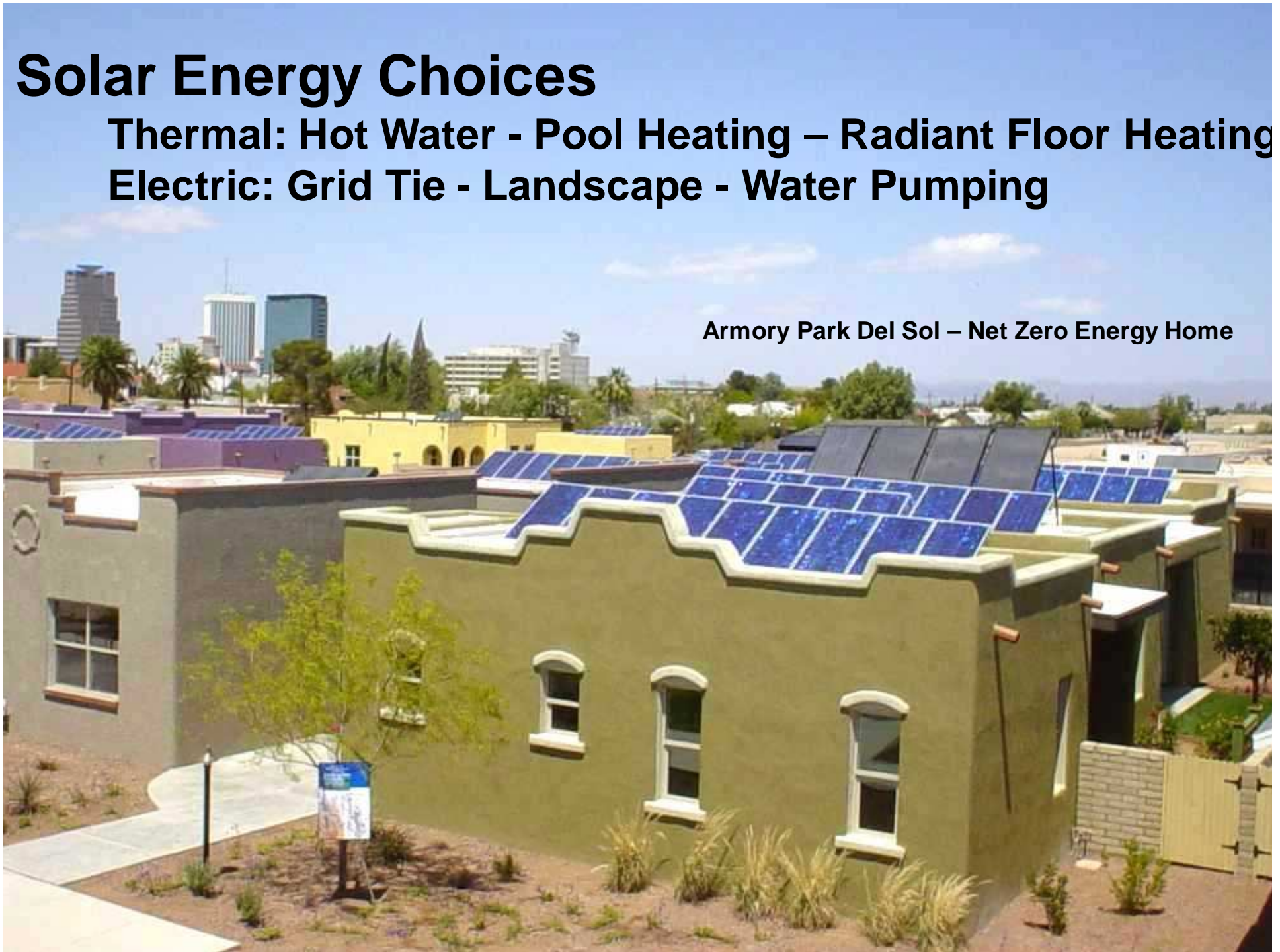


Solar Energy Choices

Thermal: Hot Water - Pool Heating – Radiant Floor Heating

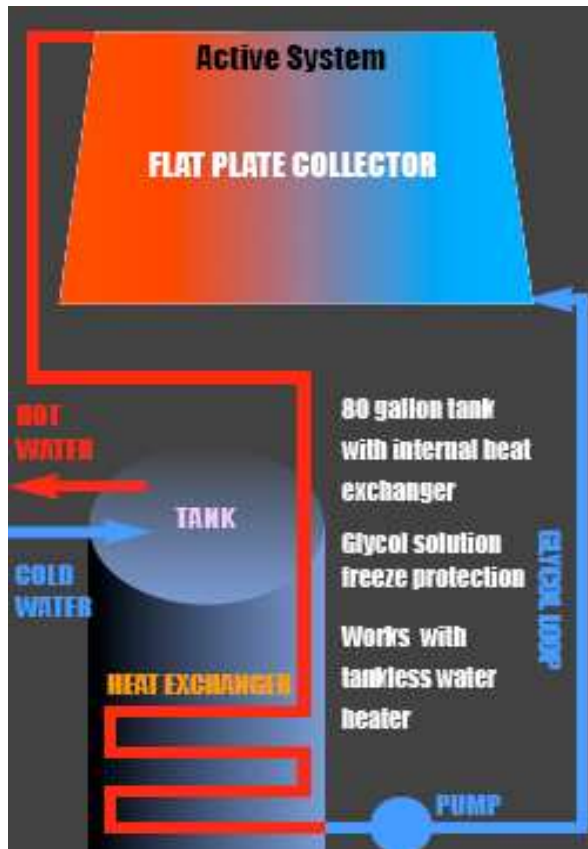
Electric: Grid Tie - Landscape - Water Pumping

Armory Park Del Sol – Net Zero Energy Home

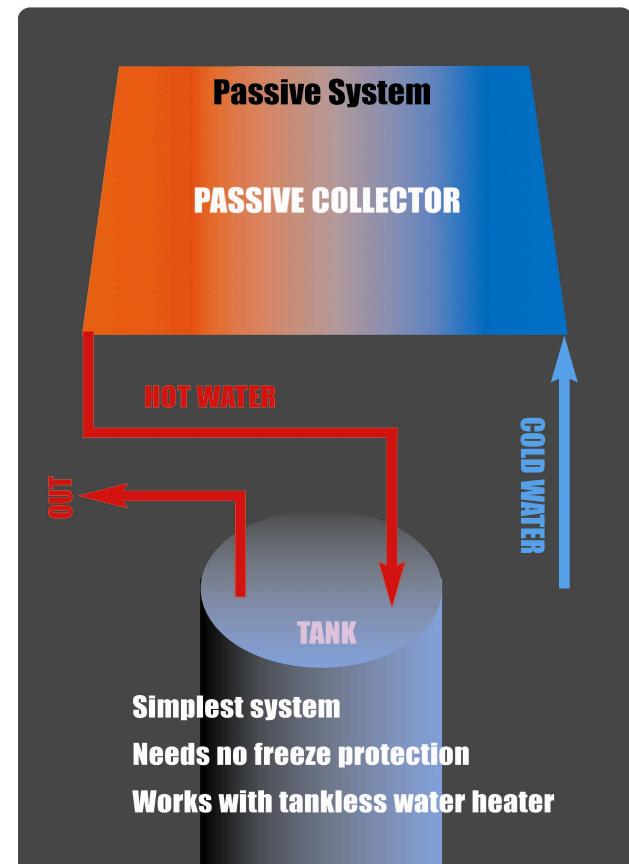


Domestic Hot Water

Active System



Passive System



PASSIVE SYSTEM

Low maintenance

No pump or controller

Use existing tank





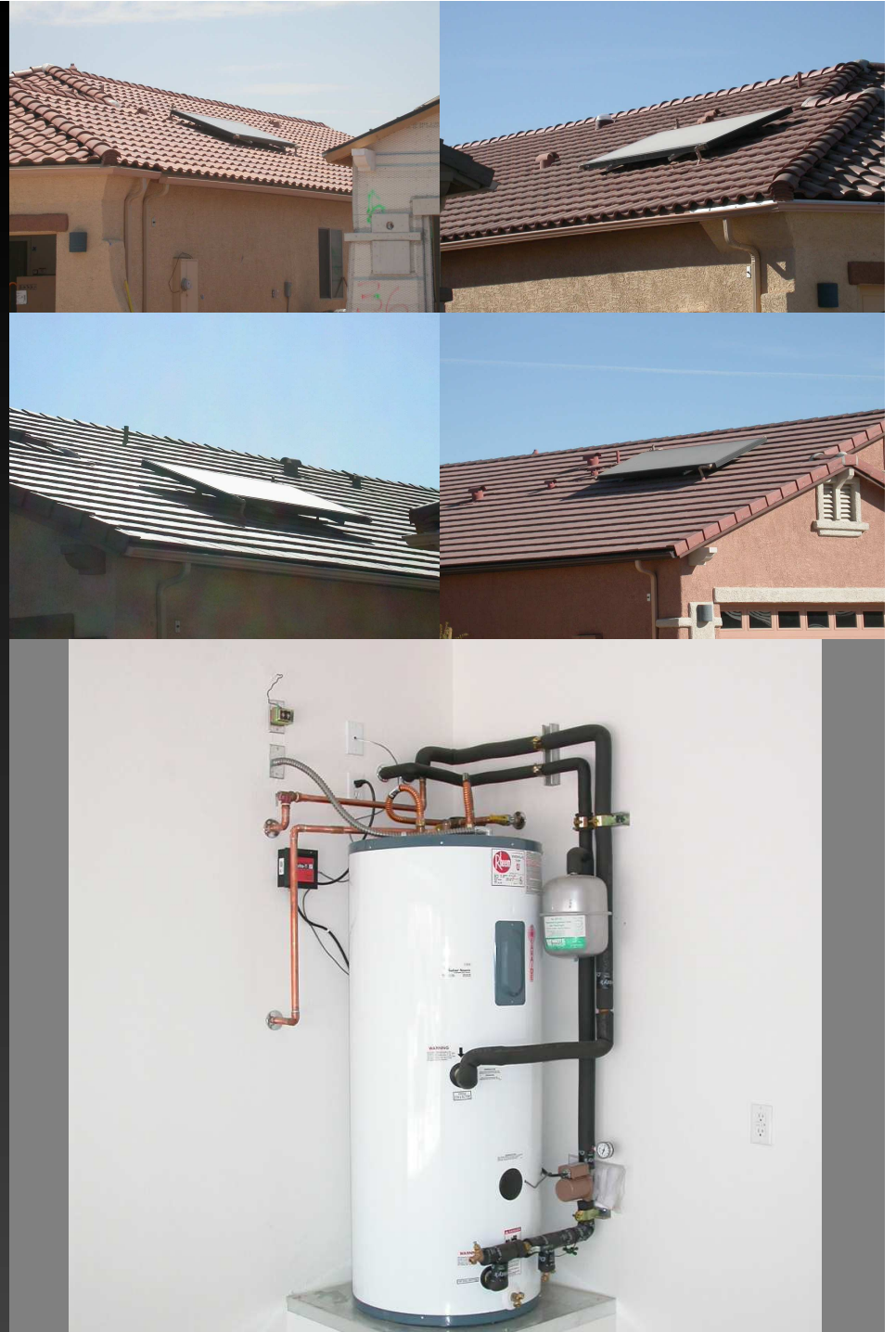


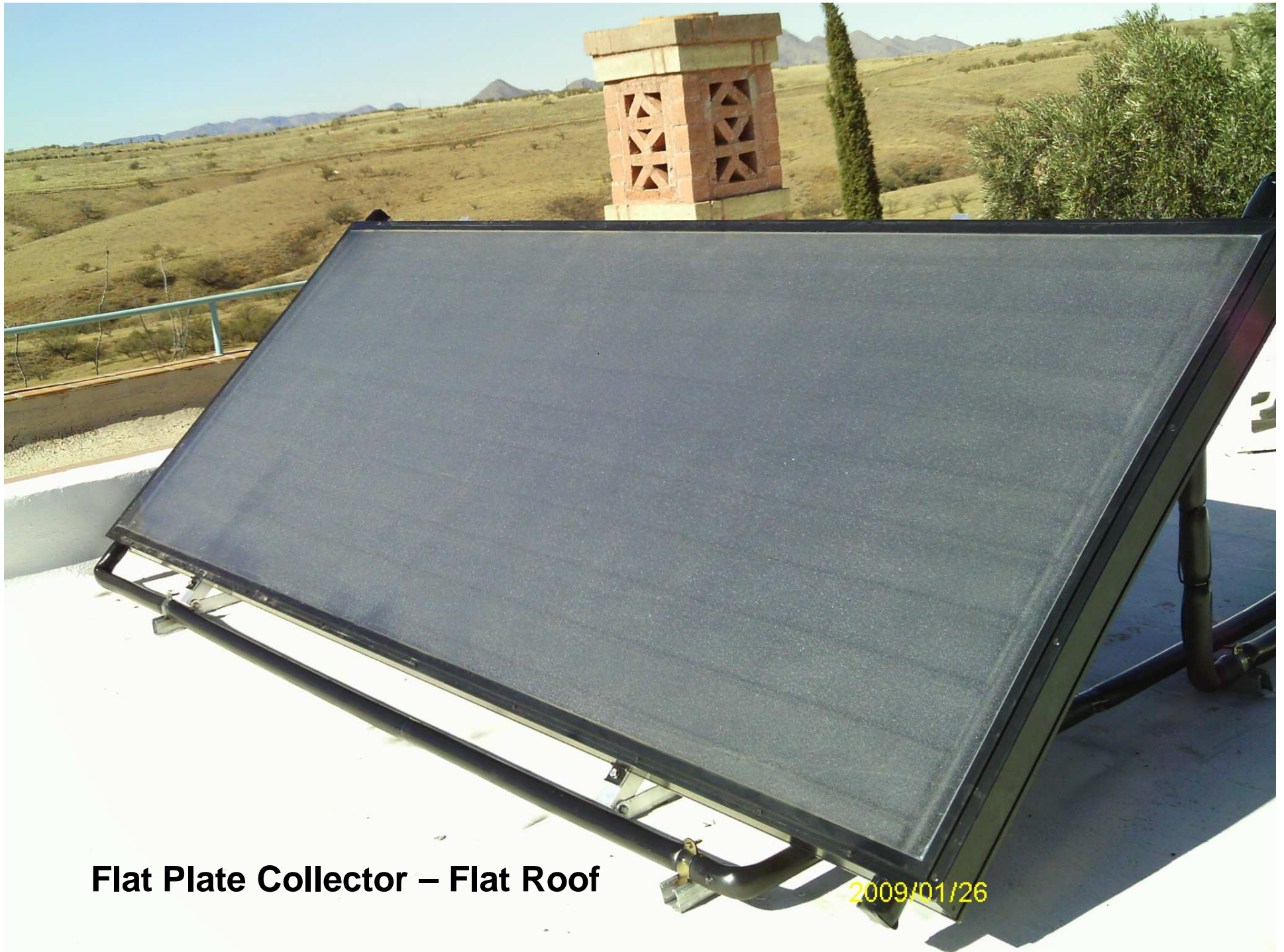
ACTIVE SYSTEM

Most energy efficient

Easy maintenance

Freeze protected





Flat Plate Collector – Flat Roof

2009/01/26



Flat Plate Collector – Tile Roof

2009/01/04

Flat Plate Collector – Metal Roof





Flat Plate Collector – Ground Mount

Flat Plate Collector –
Shingle Roof PV Operated



Flat Plate Collector with Photovoltaic System



Radiant Floor Heating







**SOLAR
HOT
WATER**

Economics

Active System \$5,650

(1,508) Incentive

(1,695) Fed Tax Credit

(1,000) State Tax Credit

\$1,447 Out of Pocket

Passive System \$5,850

(1,300) Incentive

(1,755) Fed Tax Credit

(1,000) State Tax Credit

\$1,795 Out of Pocket

Passive w/Tankless \$8,150

(1,680) Incentive

(2,445) Fed Tax Credit

(1,000) State Tax Credit

(200) SW Gas Rebate

\$2,825 Out of Pocket

Active Hot Water

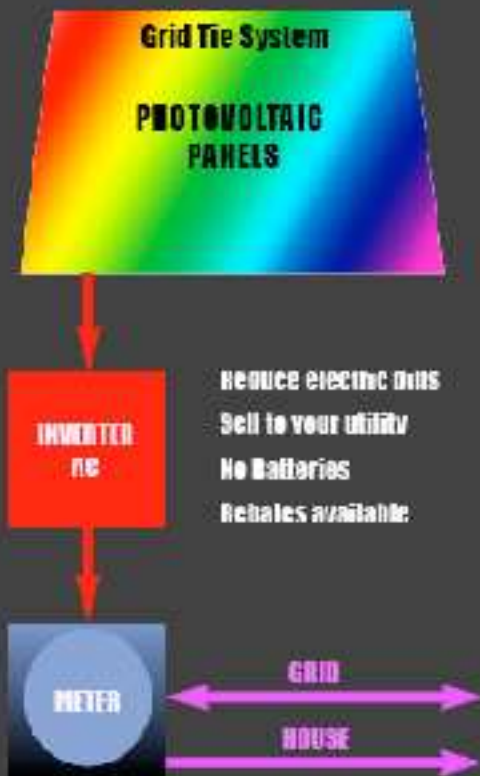
Radiant Floor Heating

Tankless Water Heater





**SOLAR
ELECTRIC**



GRID TIE

Reduce utility bill





**SOLAR
ELECTRIC**

Economics - TEP

2,000 Watts \$12,500

(4,000) Utility Rebate

(2,550) Federal Tax Credit

(1,000) AZ Tax Credit

\$4,950 Out of Pocket

\$400/year savings

5,000 Watt \$27,500

(10,000) Utility Rebate

(5,250) Federal Tax Credit

(1,000) AZ Tax Credit

\$11,250 Out of Pocket

\$1,000/year savings











LANDSCAPE
WELL PUMPING
WIND POWER

Landscape



Wind Power



Well pumping





- Park Lighting





- Park Lighting





- Kiosk Lighting



Before Looking at Solar

- ❖ Understand your energy demand
 - ❖ Review your bill
- ❖ Reduce as possible
 - ❖ Air Conditioning/Heating Equipment
 - ❖ Lighting
 - ❖ Behavioral Changes

Getting Started

❖ Locating a Contractor

- ❖ Referrals/ Ask your neighbors

- ❖ Check with Registrar of Contractors

 - www.azroc.gov

 - ❖ Experience NABCEP.org

 - ❖ Correct License

- ❖ BBB/Chamber of Commerce

Proceeding

❖ Solar Contractor Responsibilities

- ❖ Complete Utility Paperwork
- ❖ Get Required Permits
- ❖ Assist with HOA approvals
- ❖ Coordinate all inspections
- ❖ Provide Training

Completion


❖ Solar Hot Water

- ❖ 2-4 weeks to start – 1 day work

❖ Photovoltaics

- ❖ 6-12 weeks to start – 1-4 days work

- ❖ Dependent on Utility and HOA approvals and system size



Save Energy, Save Money,
Think Solar

